

# New records of olpiid pseudoscorpions (Pseudoscorpiones: Olpiidae) from the Caribbean area and Surinam, with descriptions of four new species of the genera *Pachyolpium* Beier, *Tricholpium* gen. nov. and *Heterohorus* gen. nov.

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Key words: *Heterohorus losfrailensis*; Las Aves; Los Frailes; *Pachyolpium dispersum*; *Pachyolpium leptotarsus*; Rancho Grande (Venezuela); Tortuga; *Tricholpium lasavensis*.

A large number of new localities for *Aphelolpium scitulum*, *A. brachytarsus*, *A. thibaudi*, *P. arubense arubense*, *P. a. variabile*, *P. confusum* and *P. granulatum* are reported. Two new identification keys are given: an adapted and extended key to the Caribbean genera of the pseudoscorpion family Olpiidae and a revised key to the species of the genus *Pachyolpium* Beier from the West Indies.

## Introduction

This contribution is part of an ongoing study on pseudoscorpions collected at the Caribbean area by the late Dr P. Wagenaar Hummelinck during his zoological collecting trips in 1936/1937, 1948/1949 and 1955. The material is deposited in the collection of the Netherlands Centre for Biodiversity Naturalis in Leiden. Up to now examination of his Olpiidae resulted in the description of three new genera, six new species and one new subspecies, all of which are incorporated in two added identification keys.

## Material and methods

The studied material has been mounted on permanent slides (in Canada balsam) and temporary slides (in glycerine) as reported by van den Tooren (1995: 70). Only the specimens of new species mentioned in this paper have been mounted on permanent slides. The remaining material has been transferred to alcohol 70% after studying on temporary slides in glycerine. Specimens mounted on permanent slides have been cleared in beech wood creosote after cutting the edge of the abdomen. The body (but not both pedipalps, both chelicerae, one first leg and one fourth leg) has been treated before mounting with 10% potassium hydroxide solution.

Measurements in mm have been taken with a calibrated eye-piece micrometer; mean values and extremes of measures, ratios and counts are given; specimen numbers, slide numbers, extremes and aberrant data are in parentheses; station numbers in italics.

Abbreviations used to indicate trichobothria on palpal fingers (Chamberlin, 1931: 138): movable finger (exterior surface): *t* = terminal, *st* = subterminal, *sb* = subbasal, *b* = basal; fixed finger (exterior surface): *et* = exterior terminal, *est* = exterior subterminal, *esb* = exterior subbasal, *eb* = exterior basal; fixed finger (interior surface): *it* = interior

terminal, *ist* = interior subterminal, *isb* = interior subbasal, *ib* = interior basal. L = length, W = width, D = depth, T = tactile seta. The abbreviation *sb* is used to indicate subbasal tactile seta on the dorsum of the femur.

### Systematic part

Family Olpiidae Chamberlin, 1930

Tribe Olpiini Banks, 1895

Genus *Pachyolpium* Beier, 1931

The genus is characterized by having one tactile seta on the dorsum of the femur; nodus ramosus in fixed finger of palpal chela clearly proximal to trichobothrium *et*; venom ducts in chelal fingers moderately short; on fixed finger of palpal chela *it* distal and *ist* proximal to *est*; on movable finger of palpal chela *st* nearer to *sb* than to *t*.

*Pachyolpium leptotarsus* spec. nov.

(figs 1a-f)

Material examined.— Holotype, ♂ (1147) and two ♂ paratypes (1147, 1163), Venezuela, Los Frailes: # 166, South-western Slope of Puerto Real, 18.vi.1936. Height: 60 m; diabasic-diorite; shrubs; between some plant-decay of *Croton flavens* and *Opuntia wentsiana* (PH: 6½-7), under stones.

Diagnosis.— *Pachyolpium leptotarsus* spec. nov. may be distinguished from the related *P. confundens* Hoff (1945: 9-11) by the following characteristics: length/width ratio of chelicera, length of cheliceral movable finger, and length/depth ratio of the tarsi of respectively first- and fourth leg.

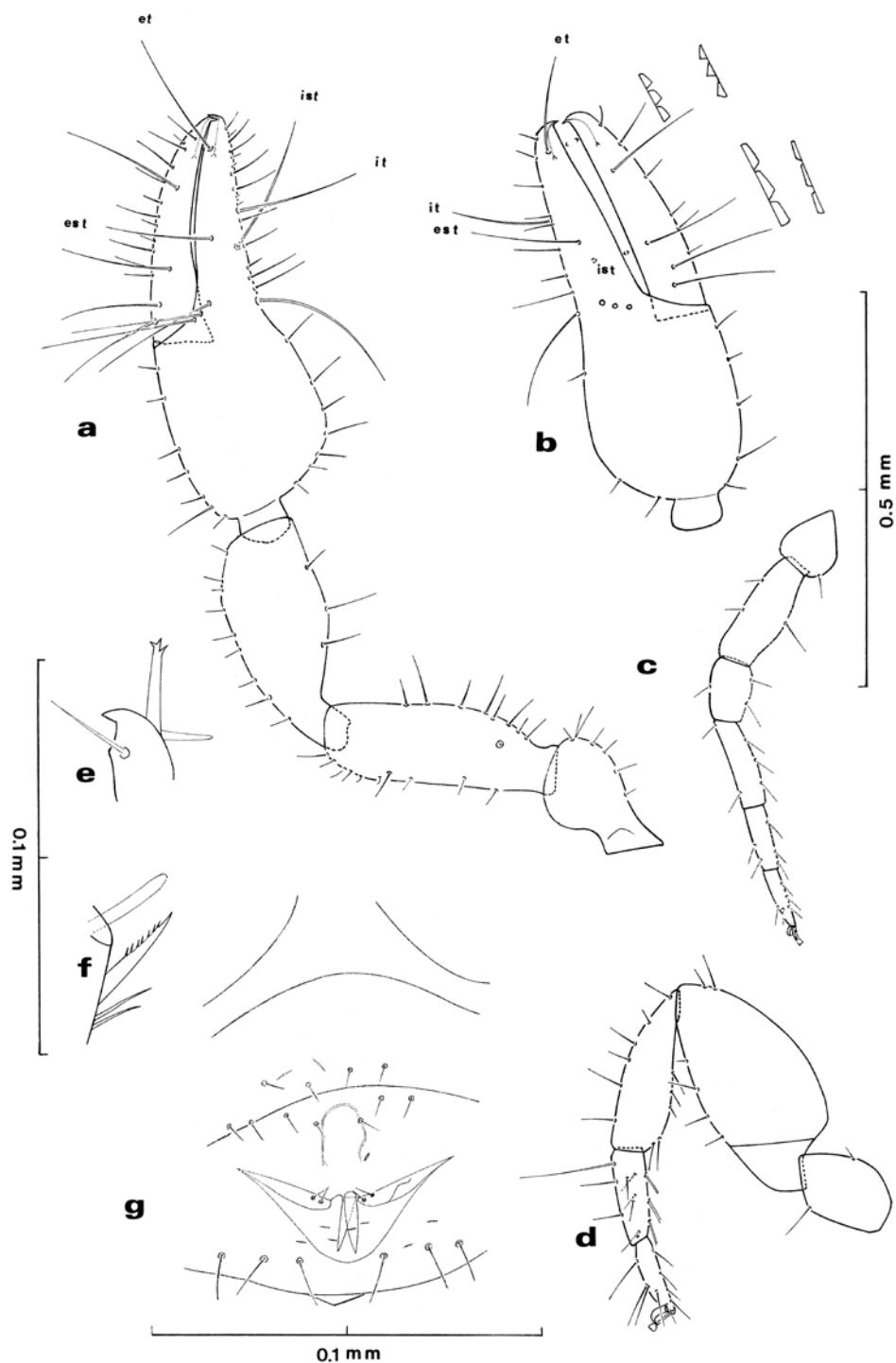
Description.— Male: description based on the holotype (1147) and partly on the ♂ paratypes (1163 and 1340). Carapace and pedipalps rather dark yellowish orange, abdomen, chelicera and legs somewhat lighter in colour. Body L 1.65 (1.61-1.70).

Carapace: 0.52 (0.51-0.55), greatest W 0.44 (0.42-0.48), L/W 1.24 (1.21-1.30); ocular W 0.34; 2 well developed eyes; along both anterior- and posterior margin 2 setae on each side of median line.

Abdomen: chaetotaxy, tergites I-XI: 5: 6: 8: 8: 8: 8: 8: 6: 1T2T1: T3T1T1; sternites IV-XI: 6: 8: 8: 6: 8: T1T2T1T (1).

Chelicera (fig. 1c-f): 021/0.11, L/W 1.82; movable finger L 0.135, with flat conical subapical lobe with obtuse top; inner margin of fixed finger with a row of 4 very small retroconical teeth connecting with apical tooth; galea L 0.03-0.045, terminally with 3 very short curved rami; serrula exterior with 21 (20-21) blades; flagellum consists of 3 spiny setae, anteriormost one 0.06 long, unilaterally finely spined in anterior distal third, middle one 0.04 long and posteriormost one 0.03 (2) long; lamina extensor on fixed finger present.

Fig. 1. *Pachyolpium leptotarsus* spec. nov., holotype ♂ (no. 1147) from Los Frailes (Lesser Antilles): a, exero-lateral aspect of left pedipalp; b, exero-lateral aspect of right chela; c, posterior aspect of left leg I; d, posterior aspect of left leg IV; e, movable finger tip of right chelicera; f, flagellum of right chelicera; g, chaetotaxy of male genital area. ►



Chaetotaxy: 5 setae on exterior surface of hand and 1 on movable finger near subapical lobe.

Pedipalp (fig. 1a-b): trochanter 0.24 (0.23-0.25) / 0.16 (0.15-0.17), L/W 1.53 (1.52-1.56); femur 0.44 (0.43-0.45) / 0.15 (0.14-0.15), L/W 3.0 (2.96-3.04); patella 0.43 (0.43-0.44) / 0.18 (0.17-0.18), L/W 2.46 (2.45-2.49); chela without pedicel 0.74 (0.72-0.75) / 0.27 (0.26-0.28), L/W 1.32 (1.28-1.36); chela with pedicel 0.77 / 0.26, L/W 2.94 (1); hand without pedicel 0.36 (0.345-0.37) / 0.27 (0.26-0.28); L/W 1.32 (1.28-1.36); hand with pedicel 0.42 (0.40-0.44) / 0.27 (0.26-0.28), L/W 1.54 (1.51-1.58); movable finger L 0.41 (0.40-0.43), 1.15 (1.11-1.19) × L hand without pedicel, and 0.98 (0.94-1.01) × L hand with pedicel; *sb* on dorsum palpal femur 0.14 (0.13-0.14) from exterior key point of femoral base; palpal femur L 3.05 (2.69-3.32) × distance from *sb* to exterior key point of femoral base.

Fixed finger with 34 marginal teeth (2) ranging from small retroconical teeth at the distal end to longer and flatter retroconical teeth at the proximal end of row. Distance trichobothria and nodus ramosus from base apical tooth on outside curve (2): *et* 0.05-0.06, *est* 0.205-0.22, *esb* 0.35, *eb* 0.35-0.36, *it* 0.16-0.17, *ist* 0.245-0.26, *isb* 0.32, *ib* 0.34-0.36, and nodus ramosus 0.06-0.07, i.e. *et* between one-seventh and one-eighth from finger tip and a little distal to the level of the nodus ramosus, *it* about two-fifth finger L from tip and clearly distal to median point finger, *est* a little distal to median point finger, *ist* proximal to the level of *est* and closer to *it* than to finger base, *isb*, *esb* and *eb* forming a row near finger base, and *ib* in a subdorsal position at about the same level as *esb*.

Movable finger with 32 (2) marginal teeth, ranging in shape from distal to proximal end in a similar way as in fixed finger, but the teeth in the middle and proximal part of the row are still much flatter than in the opposing finger and hardly retroconical. Distal trichobothria and nodus ramosus from base apical tooth on outside curve: *t* 0.11-0.13, *st* 0.26-0.275, *sb* 0.315-0.33, *b* 0.35-0.36, and nodus ramosus 0.07-0.08, i.e. nodus ramosus distal to *t* and somewhat closer to *t* than to the finger tip, *t* a little more than one-third of the finger L from the tip, *st* about one-third of the finger L from the proximal end, *sb* about halfway between *st* and the proximal end of the finger, *b* about two areolar diameters proximal to the level of *sb*.

First leg (fig. 1c): trochanter 0.12 (0.12-0.13) / 0.10, L/D 1.27 (1.26-1.27); femur 0.21 / 0.08, L.D. 2.70 (2.65-2.77); patella 0.12 (0.12-0.13) / 0.07, L/D 1.66 (1.62-1.69); femur L/ patella L 1.72 (1.68-1.75); tibia 0.18 (0.18-0.19) / 0.06, L/D 3.24 (3.17-3.35); metatarsus 0.13 (0.13-0.14) / 0.04; L/D 3.28 (3.21-3.39); tarsus 0.12 (0.115-0.12) / 0.03, L/D 3.78 (3.67-3.87); L claws 0.02 (0.02-0.025), arolium L from base claws 0.03 (0.03-0.035), and 1.41 (1.37-1.43) × L claws.

Fourth leg (fig. 1d): trochanter 0.19 (0.18-0.19) / 0.12 (0.11-0.12), L/D 1.61 (1.57-0.165); femur 0.15 (0.145-0.16) / 0.10-0.11, L/D 1.475-1.51; patella 0.37 / 0.20 (0.19-0.21), L/D 1.83 (1.76-1.97); femur + patella 0.43 (0.42-0.44) / 0.20 (0.19-0.21), L/D 2.14 (2.03-2.30); tibia 0.31 (0.31-0.315) / 0.095-0.10, L/D 3.22-3.245; metatarsus 0.185 (0.175-0.19) / 0.06, L/D 2.985-3.03; tarsus 0.145 (0.14-0.15) / 0.04, L/D 3.72 (3.61-3.86); L claws 0.04 (0.035-0.04); arolium L from base claws 0.05, and 1.38 (1.36-1.40) × L claws.

Chaetotaxy of metatarsus of fourth leg: exterior lateral T+2 (T close to proximal end), dorsal 3, interior lateral 3×2, ventral 3.

Chaetotaxy and dermal structure of male genital area (fig. 1g): posterior margin of anterior operculum with a cluster of 11 small setae and 2 large lyrifissures around median line; anterior margin of anterior lip with 2 small setae on each side of median line

and on face 7 scattered small lyrifissures more or less arranged in 2 transverse series; posterior operculum with 3 long marginal setae on each side of median line.

**Discussion.**—*Pachyolpium leptotarsus* spec. nov. differs from *P. confundens* Hoff, 1945 by the length/width ratio of the chelicera (1.8 versus 1.4), the length of cheliceral movable finger (0.135 versus 0.18), the number of marginal teeth on respectively fixed - and movable finger (34 versus about 40, and 32 versus more than 40), and the length/depth ratio of respectively first - and fourth leg (3.8-3.9 versus 3.3, and 3.7-3-9 versus 3.4).

**Etymology.**—The specific epithet (*leptotarsus*) refers to the slender tarsi of first and fourth legs (*leptus* (Greek) for slender, *tarsos* (Greek) for tarsus).

*Pachyolpium dispersum* spec. nov.  
(figs 2 a-f, 3a-d, 4a-b)

**Material examined.**—Holotype: ♀ (1281), Tortuga: # 173, South-western Tortuga, 1.viii.1936. Altitude: 20 m; coral-limestone; shrubs and small trees with much *Condalia* and cacti; under flat stones with some plant-decay; paratypes: 3 ♀ ♀ (852-853, 856), Rancho Grande (Venezuela): # 555, Parque Nac. Pittier, 1½ km E of Estación, 17.iii.1955. Altitude: 1200 m; schists, “selva nublade”, plant decay. Allotype: ♂ (854) and paratype: ♂ (855); paratypes nymphs: 2 tritonymphs (857-858), 1 deutonymph (859), and 3 protonymphs (864, 870, 883).

**Diagnosis.**—The new species differs from the related *Pachyolpium amplum* (= “*Olpiolum*” *amplum*) Hoff (1964: 24-25; only one male known from Jamaica) by the position of the trichobothria on the chelal fingers and the position of the nodus ramosus on chelal movable finger.

**Description.**—Female: description based on the holotype and three paratypes. Carapace practically smoothly dark reddish orange, tergites, chelicerae and legs pale yellowish orange, segments of pedipalps unequal in colour: trochanter yellowish orange, femur and tibia bright orange, and chela deep reddish orange. Body L 2.95 (2.77-3.17).

Carapace: 0.80 (0.79-0.80) / greatest width 0.79 (0.76-0.84), L/W 1.01 (0.94-1.05); eyes: 2 pairs, well developed, anterior eye half its diameter from posterior eye and about 1.4 times its own diameter from the anterior margin of the carapace; anterior margin with 6 setae, on posterior margin no more than 4 setae perceptible.

Abdomen: chaetotaxy tergites I-X: 5.5(4-8): 6.0(4-8): 8.5(8-10): 13.0(8-12): 11.5(8-16): 11.25(10-15): 11.75(10-15): 11.75(10-15): 1T7-10T1 (3): 1T3-8T1: chaetotaxy sternites IV-XI: 7.3(6-8): 13.7(12-16): 14.0(11-16): 12.3(12-13): 11.0(10-13): 10.7(10-12): 9.0(6-11): 2T4T2 (1).

Chelicera (figs 3a-b): 0.355 (0.31-0.35) / 0.19 (0.18-0.20), L/W 1.78 (1.70-1.85), and 0.42 (0.39-0.44) × carapace L; movable finger L 0.24 (0.20-0.28); galea L 0.09 (0.06-0.105), straight stem with 3 terminal curved rami of average length; inner margin of fixed finger with about 5 very flat non-sclerotic retroconical teeth ranging from distal end up to half-way finger length, and most distal a small sclerotic denticle, situated on the inner margin of the sclerotic apical tooth; movable finger with prominent sharp subapical lobe; serrula exterior with 23.75 (23-25) ligulate blades, flagellum of 3 spine-like setae: anterior most one longest (L: 0.09-0.10) with about 7 small spinules along distal end of anterior margin, middle one (L: 0.06-0.065) with spinules along entire anterior margin and posterior most one (L: 0.05-0.06) with about 4 small spinules in distal end of ante-

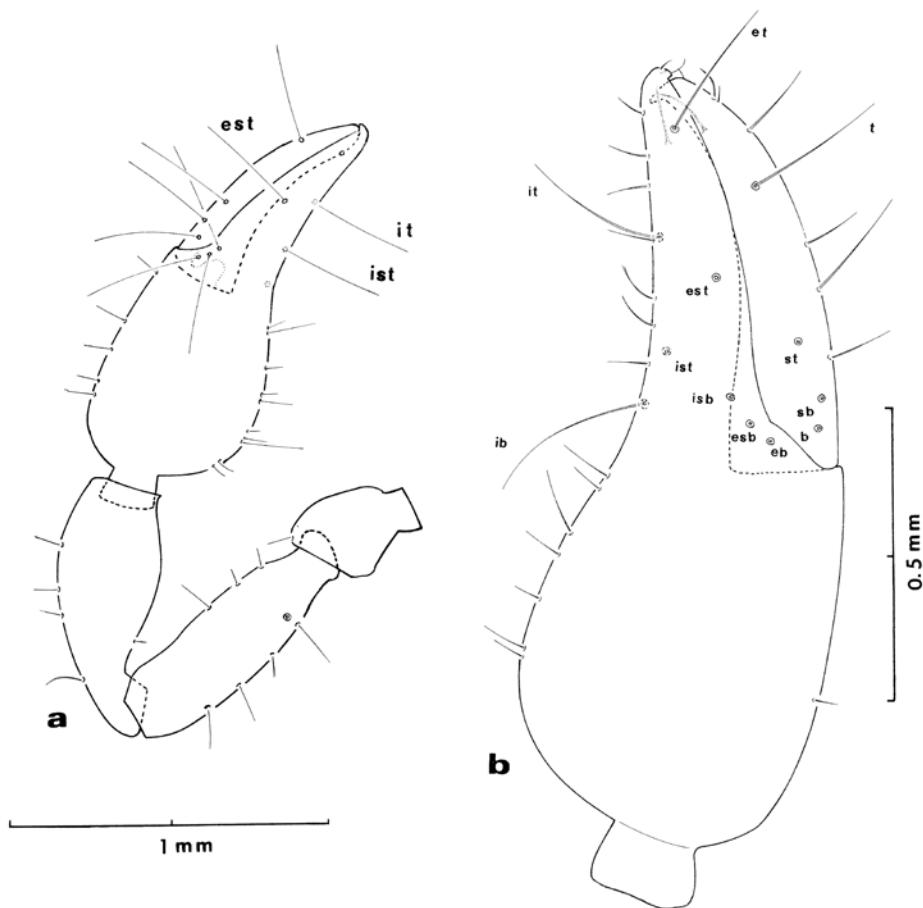


Fig. 2. *Pachyolpium dispersum* spec. nov., holotype ♀ (no. 1281) from Tortuga (Lesser Antilles): a, dorsal aspect of left pedipalp; b, sublateral aspect of right chela.

rior margin; chaetotaxy: 5 setae on exterior surface of hand and 1 sub-apical seta (galeal seta) on exterior surface of movable finger, somewhat shorter than galea. Lamina exterior present.

Pedipalp, practically smooth (fig. 2a-b): trochanter 0.44 (0.39-0.46) / 0.27 (0.27-0.28), L/W 1.615 (1.45-1.72); femur 0.76 (0.73-0.78) / 0.26 (0.25-0.265), L/W 2.95 (2.77-3.09); patella 0.795 (0.79-0.80) / 0.335 (0.32-0.35), L/W 2.37 (2.26-2.46); femur L/patella L 0.96 (0.92-0.98); chela without pedicel 1.35 (1.30-1.37) / 0.52 (0.49-0.55), L/W 2.60 (2.48-2.67); chela with pedicel 1.445 (1.40-1.47) / 0.52 (0.49-0.55), L/W 2.785 (2.65-2.87); hand without pedicel 0.725 (0.68-0.75) / 0.52 (0.49-0.55), L/W 1.40 (1.36-1.43); hand with pedicel 0.83 (0.78-0.86) / 0.52 (0.49-0.55), L/W 1.60 (1.56-1.62); movable finger L 0.70 (0.68-0.71), and 0.965 (0.92-1.03) × L hand without pedicel, 0.84 (0.81-0.89) × L hand with pedicel; *sb* on dorsum palpal femur 0.20 (0.18-0.21) from exterior key point of femoral base, i.e. palpal femur L 3.88 (3.58-4.38) × distance from *sb* to exterior key point of femoral base.

Number of marginal teeth in fixed finger (3) 51 (50-51), in movable finger (3) 56 (50-60). Marginal teeth in fixed - and movable finger of different shape, except the small triangular and cuspidated teeth at the distal end of the teeth row; in fixed finger ranging from broader and flatter to very flat and undeveloped teeth at the basal end of row; in movable finger from slightly retroconical to more rounded smaller teeth, and extending 4 teeth farther to the finger base than in fixed finger.

Distance trichobothria and nodus ramosus from base apical tooth on outside curve in fixed finger: *et* 0.085 (0.08-0.09), *est* 0.38 (0.36-0.39), *esb* 0.60 (0.55-0.64), *eb* 0.63 (0.585-0.67), *it* 0.29 (0.28-0.30), *ist* 0.49 (0.47-0.51), *isb* 0.55 (0.515-0.58), *ib* 0.57 (0.56-0.58), and nodus ramosus 0.12 (0.10-0.14), i.e. *et* a little distal to the level of nodus ramosus and located in distal seventh of finger L (finger L arbitrarily considered equal to movable finger L), *it* and *est* close to median point finger, *it* a little distal, *est* a little proximal to that point, remaining trichobothria within basal third of finger L.

Distance trichobothria and nodus ramosus from base apical tooth on outside curve in movable finger: *t* 0.26 (0.24-0.27), *st* 0.50 (0.48-0.505), *sb* 0.585 (0.57-0.60), *b* 0.62 (0.60-0.64), and nodus ramosus 0.13 (0.08-0.15), i.e. *t* between halfway and one third finger L from fingertip, nodus ramosus halfway level *t* and finger tip, *st* about one fifth finger L proximal to midpoint finger, and *sb* and *b* within basal seventh of finger L.

First leg (fig. 3c): trochanter 0.21 (0.20-0.22) / 0.16 (0.16-0.17), L/D 1.325 (1.21-1.44); femur 0.38 (0.36-0.40) / 0.12 (0.12-0.13), L/D 3.04 (2.94-3.09); patella 0.22 / 0.13 (0.12-0.13), L/D 1.73 (1.68-1.79); femur L 1.73 (1.68-1.79) × patella L; tibia 0.31 (0.30-0.315) / 0.09, L/D 3.43 (3.34-3.60); metatarsus 0.235 (0.21-0.245) / 0.07 (0.06-0.07), L/D 3.54 (3.43-3.73); tarsus 0.175 (0.17-0.18) / 0.05 (0.05-0.055), L/D 3.22 (3.17-3.33); L claws 0.055 (0.05-0.06); arolium L 0.07 (3), i.e. 1.20 (1.15-1.23) × L claws (3).

Fourth leg (fig. 3d): trochanter 0.34 / 0.19 (0.175-0.19), L/D 1.82 (1.71-1.95); femur 0.25 (0.24-0.26) / 0.165 (0.16-0.17), L/D 1.50 (1.45-1.52); patella (3) 0.62 (0.61-0.63) / 0.26 (0.255-0.26), L/D 2.44 (2.40-2.47); femur + patella 0.755 (0.74-0.77) / 0.26 (0.255-0.26) (3), L/D (3) 2.97 (2.99-3.0); tibia 0.545 (0.53-0.56) / 0.13 (0.125-0.13) (3), L/D (3) 4.30 (4.22-4.38); metatarsus 0.34 (0.31-0.36) / 0.09, L/D 3.80 (3.33-4.15); tarsus 0.24 (0.23-0.255) / 0.69 (0.065-0.07), L/D 3.50 (3.40-3.57); L claws 0.075 (0.07-0.08); arolium 0.10, i.e. 1.34 (1.27-1.40) × L claws.

Chaetotaxy of metatarsus of fourth leg: exterior lateral T+2 (T near proximal end), dorsal 3, interior lateral (3-4) × 2 (2) and (1-3) × 2 + 1 (2), ventral 3.

Chaetotaxy and internal structure of female genital area: anterior operculum on face with 3 setae in a practically straight line forward to the centre on each side of median line; near the anterior side of the segment a barely perceptible medial cluster of 10 or 15 very small setae on each side of median line; a moderate medial oval cribiform plate expanding somewhat sideward and possibly also with small lateral plates.

Discussion (includes also data obtained from examined male specimens out of additional material, which has been described after this).—*Pachyolpium dispersum* spec. nov. is distinguished from *P. amplum* Hoff, 1964, from Jamaica by the position of the trichobothrium *est* on chelal fixed finger: about twice in male, 1.2 × in female, farther from the level of *ist* than to the level of *it* (versus *est* distinctly closer to the level of *ist* than to the level of *it*); the position of the nodus ramosus on chelal movable finger: about 1.2 × in male, 1.0 × in female (versus twice) as far from finger tip as from the level of *t*; and *st* about 2.85 × both in male and female (versus somewhat more than 1.5 ×) farther from the level of *t* than from that of *sb*.

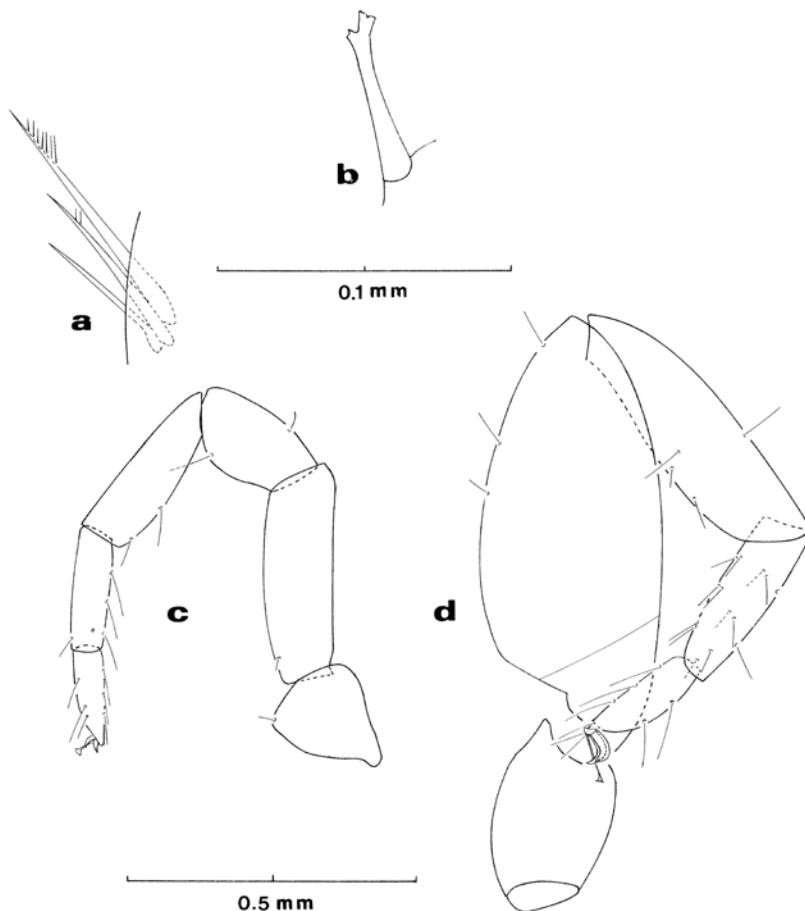


Fig. 3. *Pachyolpium dispersum* spec. nov., holotype ♀ (no. 1281) from Tortuga (Lesser Antilles) a, interior aspect of flagellum of right chelicera; b, interior aspect of galea of right chelicera; c, posterior aspect of left leg I; d, posterior aspect of leg IV.

Male.— Description based on the allotype (854) and 1 paratype (855) (figs. 4a-b). Ratios and counts expressed as ranges. Colour about similar to that of female; body, chelicerae and legs on the whole much slimmer than in ♀. Body L 2.42/2.45.

Carapace: 0.71/0.73/greatest W 0.63/0.64, L/W 1.125/1.14, eyes 2 pairs, well developed, eyes of each pair very close together, anterior eye about its own diameter from anterior margin of carapace; anterior margin with 6/6 setae, posterior margin with 4/4 setae.

Abdomen: chaetotaxy of tergites I-X: 4/4:4/4: 9/9: 11/10: 11/13: 11/14: 11/12: 12/13: 12/12: 1T6T1/1T8T1; chaetotaxy of sternites IV-X: 9/10: 13/17: 13/17: 13/15: 13/13: 11/11: 9/10.

Chelicera: 0.29/0.30 / 0.16/0.17, L.W 1.74/1.84, and 0.41/0.41 × carapace L; movable

finger L: 0.22/0.23; galea L 0.05/0.05, straight stem with 3 short curved rami; inner margin of fixed finger as in female; movable finger with blunt conical subapical lobe joined with 2 tiny marginal triangular thorns; serrula exterior with 22/23 ligulate blades, flagellum of 3 spine-like setae, anterior most one longest (L: 0.13), with small spinules in distal half of anterior margin, middle one (L: 0.11), with small spinules in distal third of anterior margin, and most posterior one (L: 0.095), with some small spinules in distal quarter of anterior margin; chaetotaxy as in female. Lamina exterior present.

Pedipalp: trochanter 0.38/0.39 / 0.225/0.23, L/W 1.67/1.72; femur 0.65/0.70 / 0.22/0.22, L/W 2.96/3.20; patella 0.69/0.71 / 0.275/0.29, L/W 2.45/2.51; femur L/patella L 0.95/0.985; chela without pedicel 1.13/1.15 / 0.40/0.405, L/W 2.83/2.84; chela with pedicel (fig. 4a) 1.21/1.23 / 0.40/0.405, L/W 3.02/3.05; hand without pedical 0.59/0.60 / 0.40/0.41, L/W 1.47/1.50; hand with pedicel 0.68/0.68 / 0.40/0.41, L/W 1.67/1.72; movable finger L 0.58/0.63, and 0.98/1.04 × L. hand without pedical, 0.85/0.92 × L hand with pedicel; sb on dorsal palpal femur 0.175/0.19 from exterior key point of femoral base, i.e. palpal femur L 3.68/3.71 × distance from sb to exterior key point of femoral base.

Number of marginal teeth in fixed finger 48/52, in movable finger 55/61. Shape of marginal teeth in both fingers about as in female. Distance trichobothria and nodus ramosus from base apical tooth on outside curve in fixed finger: et 0.07/0.08, est 0.30/0.34, esb 0.49/0.55, eb 0.51/0.57, it 0.25/0.27, ist 0.43/0.45, isb 0.475/0.51, ib 0.49/0.52, and nodus ramosus 0.10/0.11, i.e. position of trichobothria and nodus ramosus about as in female. Distance trichobothria and nodus ramosus from base apical tooth on outside curve in movable finger: t 0.20/0.22, st 0.39/0.43, sb 0.45/0.51, b 0.49/0.55, and nodus ramosus 0.11/0.12, i.e. position of trichobothria and nodus ramosus about as in female.

First leg: trochanter 0.19/0.20 / 0.14/0.14, L/D 1.37/1.38; femur 0.34/0.34 / 0.11/0.11, L/D 3.02/3.12; patella 0.19/0.19 / 0.11/0.11, L/D 1.72/1.72; femur L 1.76/1.77 × patella L; tibia 0.27/0.28 / 0.08/0.09, LD 3.265/3.56; metatarsus 0.22/0.22 / 0.06/0.06, L/D 3.47/3.48; tarsus 0.16/0.165 / 0.05/0.05, L/D 3.07/3.17; L claws 0.05/0.05; arolium L 0.06 (1) (stem retracted).

Fourth leg: trochanter 0.29/0.31 / 0.15/0.17, L/D 1.80/1.94; femur 0.21/0.23 / 0.13/0.14, L/D 1.57/1.75; patella 0.49/0.54 / 0.24/0.25, L/D 1.94/2.25; femur + patella 0.66/0.69 / 0.24/0.25, L/D 2.71/2.72; tibia 0.48/0.49 / 0.12/0.12, L/D 3.93/3.97; metatarsus 0.30/0.31 / 0.08/0.08, L/D 3.73/3.74; tarsus 0.22/0.23 / 0.06/0.07, L/D 3.53/3.60; L claws 0.065/0.07; arolium 0.08/0.09, and 1.21/1.325 × L claws.

Chaetotaxy of metatarsus of fourth leg: exterior lateral T+2/T+2 (T close to proximal end), dorsal 2/3, interior lateral 4×2/4×2, ventral 3/3.

Chaetotaxy of male genital area (number of setae given for both sides of median line) (fig. 4b): anterior operculum: 4-3/4-3, posterior margin of anterior lip: 2-1 (1), on face: 3-4 (1), anterior margin of posterior lip 2-2 (1), posterior margin of posterior lip: 2-2/2-2, posterior operculum: 2-3/2-2.

Tritonymph. Description based on 2 specimens (857-858) from Rancho Grande (Venezuela). Ratios and counts expressed as ranges. Body L 1.97/2.06.

Carapace: 0.61/0.63 / greatest W 0.46/0.46, L/W 1.32/1.36; eyes 2 pairs; anterior margin with 6 setae, posterior margin with 4 setae.

Abdomen: chaetotaxy sternites I-X: 4/4: 6/4: 9/8: 8/8: 9/8: 9/10: 9/9: 7/12: 1T7T1 (1): 1T4T1 (1); chaetotaxy sternites IV-X: 8/7: 8/10: 10/10: 10/11: 8/10: 8/8: 8/8.

Chelicera: 0.25/0.26 / 0.14/0.15, L/W 1.71/1.81, and 0.41/0.41 × carapace L; movable

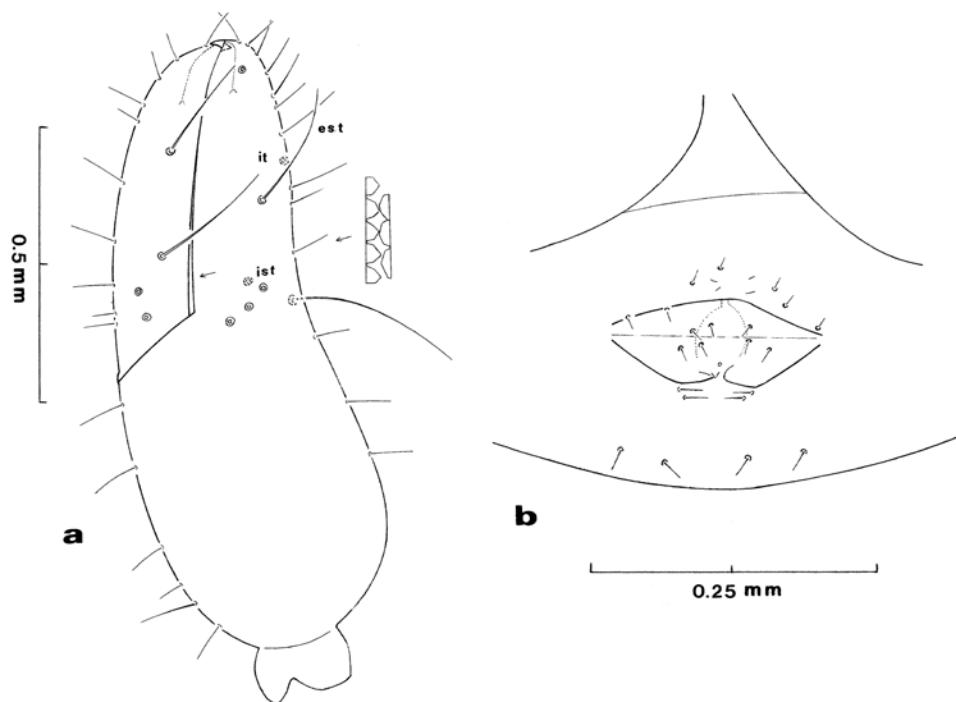


Fig. 4. *Pachyopium dispersum* spec. nov., paratype ♂ (no. 855) from Rancho Grande (Venezuela): a, extero-lateral aspect of left chela; b, chetotaxy of male genital area.

finger L 0.17/0.20; galea L 0.07/0.08 with 3 short terminal rami; inner margin of fixed finger with 4 very flat retroconical teeth associated with apical tooth; movable finger with sharp conical subapical lobe; serrula exterior of 21/21 ligulate plates; flagellum of 3 spine-like setae; anterior most one longest (L.: 0.07/0.07), L middle one: 0.045/0.005, and L posterior most one: 0.04/0.04, on anterior margin of all 3 setae small spiny denticles perceptible. Chaetotaxy complete: 5 setae on exterior surface of hand and 1 on movable finger.

Pedipalp: trochanter 0.315/0.33 / 0.18/0.20, L/W 1.67/1.71; femur 0.49/0.53 / 0.175/0.18, L/W 2.80/2.93; patella 0.53/0.54 / 0.23/0.24, L/W 2.30/2.35; femur L 0.92/0.97 × patella L; chela without pedicel 0.92/0.97 / 0.34/0.35, L/W 2.68/2.73; chela with pedicel 1.01/1.03 / 0.34/0.35, L/W 2.91/2.96; hand without pedicel 0.48/0.50 / 0.34/0.35, L/W 1.41/1.42; hand with pedicel 0.55/0.61 / 0.34/0.35, L/W 1.62/1.73; movable finger L: 0.485/0.50, and 1.0/1.01 × L hand without pedicel, and 0.82/0.88 × L hand with pedicel; sb on dorsum femur 0.15/0.15 from exterior key point of femoral base.

Number of marginal teeth in fixed finger 40 (1), in movable finger 45 (1). Distance trichobothria and nodus ramosus from base apical tooth on outside curve in fixed finger: et 0.07/0.07, est 0.26/0.27, esb 0.41/0.42, eb 0.44/0.45, it 0.23/0.23, ist 0.36/0.37, isb lacking, ib 0.41/0.42 and nodus ramosus 0.09/0.09, i.e. et and nodus ramosus within 1/5 finger L (arbitrarily considered equal to movable finger L), level nodus ramosus a little proximal to that of et, it about median point finger, est proximal to that point, ist on a level of

about  $\frac{1}{4}$  finger L from base, *ib*, *b* and *esb* in a still more basic position.

Distance trichobothria and nodus ramosus in movable finger: *t* 0.19/0.20, *st* 0.35/0.37, *sb* lacking, *b* 0.42/0.44, and nodus ramosus 0.09, i.e. *t* on about a level of  $\frac{2}{5}$  finger L from finger tip, nodus ramosus about halfway *t* and finger tip, *st* about  $\frac{1}{4}$  finger L from base, and *b* about halfway the level of *st* and finger base.

First leg: trochanter 0.16/0.17 / 0.11/0.12.5, L/D 1.34/1.38; femur 0.26/0.27 / 0.09/0.10, L/D 2.69/2.86; patella 0.16/0.16 / 0.09/0.10. L/D 1.63/1.70; femur L 1.67/1.74  $\times$  patella L; tibia 0.20/0.22 / 0.07/0.07, L/D 2.95/3.01; metatarsus 0.15/0.17 / 0.05/0.06, L/D 2.82/2.92; tarsus 0.14/0.15 / 0.05, L/D 3.05/3.15; L claws 0.035/0.04; L arolium 0.04/0.05, and 1.12/1.265  $\times$  L claws.

Fourth leg (1): trochanter 0.23/0.135, L.D 1.69; femur 0.18/0.135, L/D 1.36; patella 0.44/0.20, L/D 2.18; femur + patella 0.54/0.20, L/D 2.68; tibia 0.385/0.10, L/D 3.93; metatarsus 0.24/0.075, L/D 3.07; tarsus 0.18/0.05, L/D 3.47; L claws 0.035; L arolium 0.04, and 1.25  $\times$  L claws.

Chaetotaxy of metatarsus of fourth leg: exterior lateral: T+2, dorsal: 2, interior lateral: 3 $\times$ 2, ventral: 2.

Deutonymph. Description based on the specimen (859) from Rancho Grande (Venezuela).

Body L 1.70. Carapace: 0.52/greatest W 0.38, L/W 1.37, eyes 2 pairs, position as in tritonymph, anterior margin of carapace with 6 setae, posterior margin with 4 setae.

Abdomen: chaetotaxy of tergites IV-XI: 6: 8: 10: 10: 10: 10: 8: 1T3T1; chaetotaxy of sternites IV-XI: 8: 8: 9: 8: 8: 7: 1T3T1.

Chelicera: 0.20/0.12. L/W 1.70, and 0.38  $\times$  carapace L, movable finger L 0.15, galea L 0.06, with 3 short curved terminal rami; inner margin of fixed finger with 4 very flat retroconical teeth associated with apical tooth; movable finger with prominent sharp conical subapical lobe; serrula exterior with 19 ligulate blades; flagellum of 3 spine-like setae, anterior most one longest (L.: 0.06), L middle one: 0.035 and L posterior most one: 0.03; on anterior margin of first 2 setae small spinules in distal third. Chaetotaxy as before, all setae are present.

Pedipalp: trochanter 0.25/0.15, L/W 1.71; femur 0.41/0.14, L/W 2.97; patella 0.39/0.175, L/W 2.255; femur L 1.04  $\times$  patella L; chela without pedicel 0.71/0.245, L/W 2.89; chela with pedicel 0.75/0.245, L.W 3.09; hand without pedicel 0.36/245, L/W 1.46; hand with pedicel 0.39/0.245, L/W 1.61; movable finger L 0.35, and 0.97  $\times$  L hand without pedical, and 0.88  $\times$  L hand with pedicel; *sb* on dorsum femur 0.12 from exterior key point of femoral base, i.e. palpal femur L 3.42  $\times$  distance from *sb* to exterior key point of femoral base.

Number of marginal teeth in fixed finger up to about 35, in movable finger up to about 40 marginal teeth. Distance trichobothria and nodus ramosus from base apical tooth on outside curve in fixed finger: *et* 0.09, *est* 0.22, *esb* lacking, *eb* 0.35, *it* 0.20, *ist* 0.25, *isb* lacking, *ib* 0.33, and nodus ramosus 0.07, i.e. nodus ramosus at about distal sixth, *it* just distal to median point and *ist*, *ib* and *eb* within basal fifth of finger (arbitrarily considered equal to movable finger L). Distance trichobothria and nodus ramosus from base apical tooth on outside curve in movable finger: *t* 0.175, *st* 0.32, *sb* and *b* lacking, and nodus ramosus 0.07, i.e. nodus ramosus at about distal sixth of finger, *t* distal to median point finger, and *st* at about basal quarter of finger.

First leg: trochanter 0.13/0.10, L/D 1.32; femur 0.20/0.065, L/D 3.07; patella 0.12/0.07,

L/D 1.595; femur L 1.72 × patella L; tibia 0.16/0.06, L/D 2.88; metatarsus 0.115/0.05, L/D 2.38; tarsus 0.12/0.04, L/D 3.0; L claws 0.035, L arolium 0.04, and 1.20 × L claws.

Fourth leg: trochanter 0.18/1.05, L/D 1.75; femur 0.13/0.09, L/D 1.38; patella 0.32/0.135, L/D 2.35; femur + patella 0.39/0.135, L/D 2.92; tibia 0.29/0.08, L/D 3.67; metatarsus 0.17/0.06, L/D 2.83; tarsus 0.15/0.04, L/D 3.44, L claws 0.05; L arolium 0.06, and 1.24 × L claws.

Chaetotaxy of metatarsus of fourth leg: exterior lateral: T+1, dorsal: 1, interior lateral: 2x2, ventral: 1.

Protonymph. Description based on 3 specimens (864, 870, 883) from Rancho Grande, Venezuela. Body L 1.24 (1.16-1.305).

Carapace: 0.45 (0.45-0.46) / greatest W 0.34 (0.32-0.36), L/W 1.335 (1.29-1.38); eyes 2 pairs, front eye of each pair about 2 times its own diameter from anterior margin; anterior carapacial margin with 4 (2) or 2 (1) marginal setae, posterior margin with 2 (1) or 4 (2) marginal setae.

Abdomen: middle tergites and middle sternites with 4 marginal setae.

Chelicera: 0.17 (0.16-0.17) / 0.10 (0.095-0.10) / 1.71 (1.65-1.74), and 0.37 × carapace L; movable finger L 0.12 (0.115-0.12); galea L 0.05, with 3 short curved terminal rami; teeth on inner margin of fixed finger and subapical lobe on movable finger about as in deutonymph; serrula exterior with 15 ligulate blades; flagellum of 3 spines, anteriomost one longest (L: 0.03/0.05 (2)), L middle one: 0.03 (2), and L posterior one: 0.02 (2). Chaetotaxy: number of setae on exterior surface of cheliceral hand incomplete, lacking: galeal seta and sub-basal seta.

Pedipalp: trochanter 0.19 (0.19-0.20) / 0.11 (0.105-0.12), L/W 1.73 (1.62-1.85); femur 0.30 (0.29-0.30) / 0.105 (0.10-0.11), L/W 2.90 (2.82-3.0); patella 0.30 (0.29-0.315) / 0.13 (0.12-0.13), L/W 2.38 (2.32-2.41); femur L 0.99 (0.96-1.02) × L patella; chela without pedicel 0.56 (0.53-0.57) / 0.18 (0.16-0.185), L/W 3.13 (3.01-3.26); chela with pedicel 0.59 (0.56-0.615) / 0.18 (0.16-0.19), L/W 3.34 (3.185-3.48); hand without pedicel 0.28 (0.27-0.30) / 0.18 (0.16-0.19), L/W 1.59 (1.435-1.71); hand with pedicel 0.325 (0.315-0.34) / 0.18 (0.16-0.19), L/W 1.83 (1.68-1.95); movable finger L 0.30 (0.27-0.32), and 1.06 (0.98-1.20) × L hand without pedicel, and 0.92 (0.87-1.04) × hand with pedicel; sb on dorsum femur 0.09 from exterior key point of femoral base, i.e. palpal femur L 3.18 (3.0-3.22) × distance from sb to exterior key point of femoral base.

Number of marginal teeth in fixed finger 28 (1), in movable finger 24 (1) marginal teeth. Distance trichobothria and nodus ramosus from base apical tooth on outside curve in fixed finger: et 0.12 (0.11-0.13), est lacking, esb lacking, eb 0.28 (0.26-0.30), it lacking, ist 0.25 (0.24-0.26), isb lacking, ib lacking and nodus ramosus in a distal position 0.06 (0.06-0.07), i.e. nodus ramosus at about one fifth finger L from finger tip (finger L arbitrarily considered equal to movable finger L), et a little distal to the level of nodus ramosus and eb in a basal position. Distance trichobothria and nodus ramosus from base apical tooth on outside curve in movable finger: t 0.18 (0.17-0.20), st lacking, sb lacking, b lacking, and nodus ramosus 0.06 (0.06-0.07), i.e. nodus ramosus in same position as in fixed finger and t about three-fifth finger L from finger tip.

First leg: trochanter (2) 0.09-0.105 / 0.07-0.08, L.D 1.22/1.33; femur 0.14 (0.13-0.15) / 0.05 (0.05-0.06), L/D 2.46 (2.40-2.50); patella 0.09 (0.06-0.07), L/D 1.49 (1.42-1.54); femur L 1.52 (1.43-1.61) × patella L; tibia 0.12 (0.11-0.12) / 0.05, L/D 2.32 (2.155-2.47); metatarsus 0.08 (0.08-0.09) / 0.04 (0.04-0.05), L.D 2.0; tarsus 0.10 (0.095-0.11) / 0.04 (0.03-0.04), L/D 2.71 (2.45-2.97); L claws 0.03; L arolium 0.03 (0.03-0.04), and 1.09 (0.92-1.22) × L claws.

Fourth leg: trochanter (2) 0.14-0.15 / 0.08, L/D 1.78-1.94; femur 0.11 (0.10-0.12) / 0.08 (0.08-0.09), L/D 1.34 (1.33-1.36); patella 0.24 (0.22-0.25) / 0.11 (0.10-0.11), L/D 2.28 (2.27-2.29); femur + patella 0.30 (0.28-0.32) / 0.11 (0.10-0.11), L/D 2.89 (2.85-2.94); tibia 0.22 (0.21-0.23) / 0.06 (0.06-0.05), L/D 3.55 (3.51-3.57); metatarsus 0.135 (0.125-0.14) / 0.05, L/D 2.74 (2.60-2.90); tarsus 0.13 (0.12-0.135) / 0.04, L/D 3.21 (3.08-3.32); L claws 0.04; L arolium (2) 0.04-0.05, and 0.99-1.23 × L claws.

Chaetotaxy of metatarsus of fourth leg: exterior lateral: T+1, dorsal: 1, interior lateral: 2×1, ventral: 1.

**Etymology.**— the specific epitheton (*dispersum*) indicates that the description of the new species is based on specimens originated from different localities (*dispersus* (Latin for scattered).

**Remarks.**— It appears that in all three nymphal stages the trichobothria *isb* and *sb* on respectively palpal fixed- and movable finger are lacking, same for *esb* and *st* in proto- and deutonymph, and further for *est*, *it*, *ib* and *b* in protonymph. According to Harvey (1992: 1421, figs 172-175) a statement valid for all species of the superfamily Olpioidea Banks, stat. nov. The setae on the exterior surface of the chelicera (5 on hand, 1 on movable finger) are present in trito- as well in deutonymph, however in protonymph sub-, basal- and galeal setae are absent.

#### *Tricholpium* gen. nov.

**Type species.**— *Tricholpium lasavensis* spec. nov. Terra typica: Las Aves (Lesser Antilles).

**Diagnosis.**— The new olpiid genus *Tricholpium* may be distinguished by the position of the trichobothria *ib*, *ist*, *est* and *it* on the palpal fixed finger and by the number of blades on cheliceral serrula exterior.

**Discussion.**— The new genus *Tricholpium* differs from the genus *Banksolpium* Muchmore (1986: 87) by having the trichobothrium *ist* situated on a level proximal to that of *est* (versus *ist* distal to *est*), and from the genus *Leptolpium* van den Tooren, 2002, by the proximal position of *est* with respect of the level of *it* (versus level *est* distal to that of *it*), by the position of *ib* on about the same level of *est* (versus *ib* in subbasal position and situated far below the associated trichobothria *eb*, *esb*, *isb* and *ist*), and also by having 21 versus 16 blades on cheliceral serrula exterior.

#### *Tricholpium lasavensis* spec. nov. (figs 5a-b, 6a-e)

**Material examined.**— Holotype ♂ (1286) and paratype ♂♂ (1287-1288), Lesser Antilles, Las Aves, Ave de Barlovento: # 179, 27.vii.1936. Height: 2 m; coral-sand; beach vegetation; between clumps of *Cyperaceae*.

**Male.**— Description based on holotype and paratypes.

Carapace, body and pedipalp dark reddish orange, legs and chelicera light yellowish orange. Body L 2.42 (2.27-2.59).

Carapace L 0.76 (0.74-0.79), greatest W 0.57 (0.55-0.59), L/W 1.34 (1.32-1.35); eyes: 2 pairs, anterior eye well developed, posterior one somewhat smaller, both eyes close

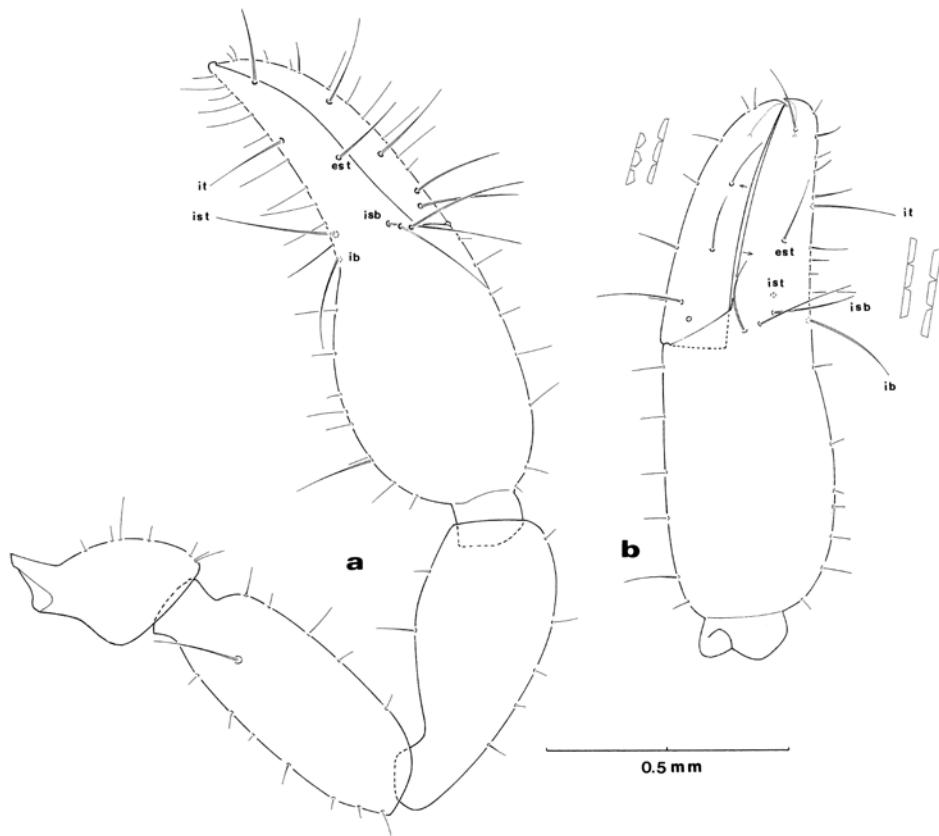


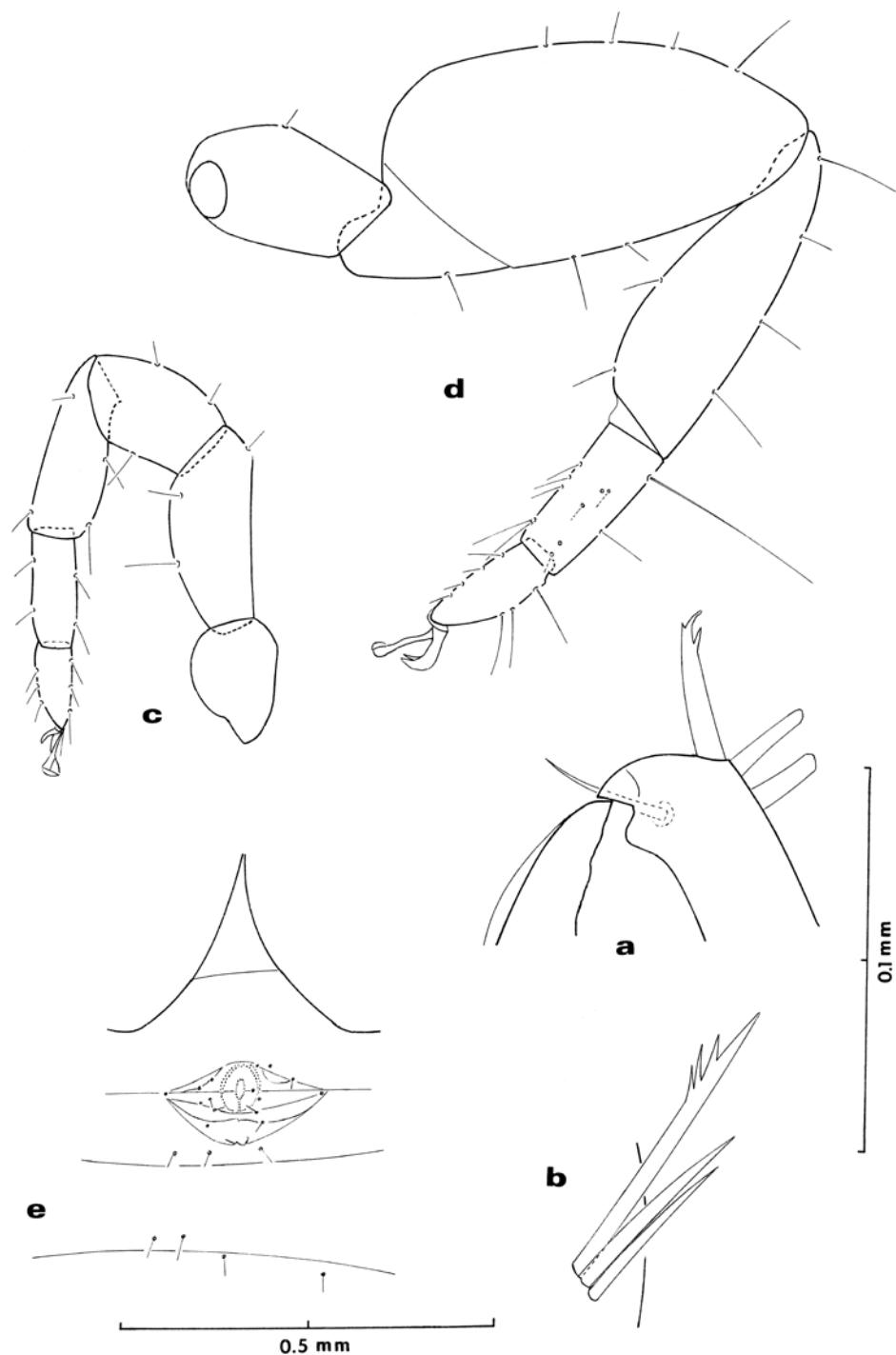
Fig. 5. *Tricholpium lasavensis* gen. nov. et spec. nov., holotype ♂ (no. 1286) from Las Aves (Lesser Antilles): a, dorsal aspect of right pedipalp; b, extero-lateral aspect of left chela.

together, anterior eye about its own diameter separated from anterior margin of carapace; anterior- and posterior margin of carapace with 6 marginal setae.

Abdomen (1): 1.75 / greatest W 0.75, L/W 2.33; chaetotaxy tergites I-XI: 4: 4: 6.7 (6-8): 6.7 (6-8): 6.7 (6-8): 8: 9.3 (8-10): 8.3 (8-9): 8.7 (8-10): T6T(T4T-T8T): 7 (6-10); chaetotaxy sternites IV-XI: 7.3 (6-8): 8.3 (8-9): 8.3 (8-9): 9 (7-10): 9.3 (8-10): 9.3 (8-10): 7 (5-8): 1T2T1 (2TT1-2T1-1T2).

Chelicera: (fig. 6a-b) 0.28 (0.26-0.28) / 0.17 (0.16-0.175), L/W 1.645 (1.62-1.685), and 0.36 (0.35-0.37) × carapace L; movable finger L 0.19 (0.17-0.21); galea L 0.04 (0.03-0.05),

Fig. 6. *Tricholpium lasavensis* gen. nov. et spec. nov., holotype ♂ (no. 1286) and paratype ♂ (no. 1287) (e) from Las Aves (Lesser Antilles): a, interior aspect of tip of fixed - and movable finger of left chelicera showing galeal seta, sub-apical lobe, apical tooth, galea, anterior most first blades of serrula exterior and part of lamina exterior; b, interior aspect of flagellum of left chelicera; c, ventral aspect of left leg I; d, ventral aspect of left leg IV; e, chaetotaxy of male genital area. ►



with 3 terminal rami of average length or with 2 small terminal rami and 1 somewhat longer lateral ramus near about distal one-fourth of main stalk; sclerotic apical tooth of fixed finger with 2 or 3 very small internal marginal knobs, associated with up to 4 or 5 degenerated very flat retroconical teeth; movable finger with prominent non sclerotic subapical lobe with rounded top of about same size as apical tooth; serrula exterior with 21 ligulate blades; flagellum of 3 spine-like setae (1 long, 2 short): anterior most one longest and provided with 3 or 4 small spines along anterior margin near distal quarter. Chaetotaxy: 5 setae on exterior surface of hand and 1 small seta just beyond movable finger tip and about of same length as galea.

Pedipalp (fig. 5a-b): trochanter (2) 0.38-0.41 / 0.22-0.23, L/W 1.74-1.75; femur 0.63 (0.61-0.65) / 0.22 (0.22-0.23), L/W 2.80 (2.78-2.82); patella 0.65 (0.63-0.675) / 0.26 (0.245-0.275), L/W 2.50 (2.45-2.58); femur L / patella L 0.97 (0.965-0.98); femur L / patella L 0.97 (0.965-0.98); chela without pedicel 1.09 (1.07-1.135) / 0.35 (0.35-0.36), L/W 3.08 (2.97-3.25); chela with pedicel 1.17 (1.135-1.212) / 0.35 (0.35-0.36), L/W 3.30 (3.18-3.47); hand without pedicel 0.58 (0.56-0.61) / 0.355 (0.35-0.365), L/W 1.63) 1.57/1/75); hand with pedicel 0.68 (0.65-0.71) / 0.355 (0.35-0.365), L/W 1.90 (1.83-2.035); movable finger L 0.56 (0.55-0.57), and 0.96 (0.93-0.99) × L hand without pedicel and 0.83 (0.80-0.86) × L. hand with pedicel; sb on dorsum palpal femur 0.18 (0.175-0.18) from exterior key point of femoral base; palpal femur L 3.56 (3.44-3.65) × distance from sb to exterior key point of femoral base.

Fixed finger (1) with 44 marginal teeth ranging from more or less cuspidate in the very distal part of the finger to flattened in the middle part, and extreme flattened and broader teeth in the basal part of the finger. Distance trichobothria and nodus ramosus from base apical tooth on outside curve: *et* 0.06 (0.06-0.07), *est* 0.305 (0.30-0.315), *esb* 0.47 (0.46-0.48), *eb* 0.48 (0.48-0.485), *it* 0.23 (0.22-0.245), *ist* 0.42 (0.41-0.43), *isb* 0.45 (0.44-0.455), *ib* 0.47 (0.45-0.49), i.e.: *et* and nodus ramosus at about 1/5-1/6 finger L (arbitrarily considered equal to movable finger L) from finger tip, nodus ramosus in such a way very little proximal to *et* seeing that it touches the outside margin of the areole of this trichobothrium, *it* a little distal and *est* proximal (but close) to median point finger, *eb*, *esb* and *isb* in a straight row and just as *ib* in basal position, *ist* somewhat more distal and situated on 1/4 finger L from base finger, fixed finger L 6.1 (5.0-6.9) × venom duct L.

Movable finger (1) with 42 marginal teeth ranging from cuspidate in distal quarter of finger to rounded and flattened far into the middle part, and broader and still more flattened teeth in the basal part of finger. Distance trichobothria and nodus ramosus from base apical tooth on outside curve: *t* 0.18 (0.17-0.20), *st* 0.33 (0.32-0.34), *sb* 0.45, *b* 0.475 (0.47-0.48), and nodus ramosus 0.10 (0.09-0.11), i.e.: *t* about 2/5 finger L from tip, nodus ramosus half-way *t* and finger tip, *b* within basal quarter of finger, movable finger L 5.5 (5.0-6.1) × venom duct L.

First leg (fig. 6c): trochanter 0.15 (0.14-0.17) / 0.13 (0.12-0.13), L/D 1.21 (1.16-1.28); femur 0.255 (0.245-0.27) / 0.11 (0.105-0.12), L/D 2.25 (2.19-2.36); patella 0.19 (0.19-0.20 / 0.13 (0.13-0.14), L/D 1.57 (1.49-1.69); femur L / patella L 1.30 (1.27-1.33); tibia 0.24 (0.23-0.245) / 0.09 (0.08-0.09); L/D 2.77 (2.69-2.89); metatarsus 0.15 (0.14-0.16) / 0.06 (0.06-0.07), LD 2.50 (2.432.57); tarsus 0.11 (0.11-0.12) / 0.05, L/D 2.23 (2.13-2.30), with prominent tactile seta on about half-way outer margin; L claws 0.04; arolium L (from base claws) 0.06 (0.06-0.07), and 1.68 (1.64-1.71) × L claws.

Fourth leg (fig. 6d): trochanter 0.26 / 0.16 (0.15-0.16), L/D 1.69 (1.67-1.72); femur 0.24 (0.23-0.25) / 0.15 (0.15-0.16), L/D 1.62 (1.49-1.71); patella 0.56 (0.55-0.58) / 0.28 (0.27-0.29),

L/D 2.0 (1.98-2.03); femur + patella 0.67 (0.66-0.69) / 0.28 (0.27-0.29), L/D 2.38 (2.35-2.41); tibia 0.49 (0.46-0.52) / 0.14 (0.13-0.15), L/D 3.47 (3.43-3.53); metatarsus 0.22 (0.21-0.23) / 0.08 (0.08 (0.08-0.085), L/D 2.59 (2.56-2.66); tarsus 0.18 (0.17-0.19) / 0.06 (0.06-0.07), L/D 2.72 (2.63-2.83); L claws 0.07; arolium L 0.11-0.12, and 1.62-1.65 × L claws.

Chaetotaxy of metatarsus of fourth leg: external lateral: T+1 (tactile seta T close to proximal end), dorsal: 3, interior lateral: (3×1) + 1×2 (near distal end) (1) or: 2 × (1+2), ventral: 2.

Chaetotaxy of ♂ genital area (on both sides of median line) (fig. 6e): anterior operculum: 2-3/2-3, anterior - or posterior margin of anterior lip: 2-3/2-3, anterior margin of posterior lip: 2-3/2-3, posterior margin of posterior lip: 2/2 (1), and posterior operculum: 1-3/1-3.

**Etymology.**— The name of the generic epitheton (*Tricholpium*) refers to the arrangement of the trichobothria and nodus ramosus on both chelal fingers (trichos (Greek for hair)). The specific epitheton (*lasavensis*) refers to the type location (Las Aves, Lesser Antilles).

Genus *Heterohorus* gen. nov.  
(figs 7a-f, 8a-f)

Type species.— *Heterohorus losfraileensis* spec. nov. Terra typica: Los Frailes (Lesser Antilles).

**Diagnosis.**— The new genus can be distinguished by the position of trichobothria *b*, *sb* and *st* on palpal movable finger and of *isb* and *ist* on palpal fixed finger.

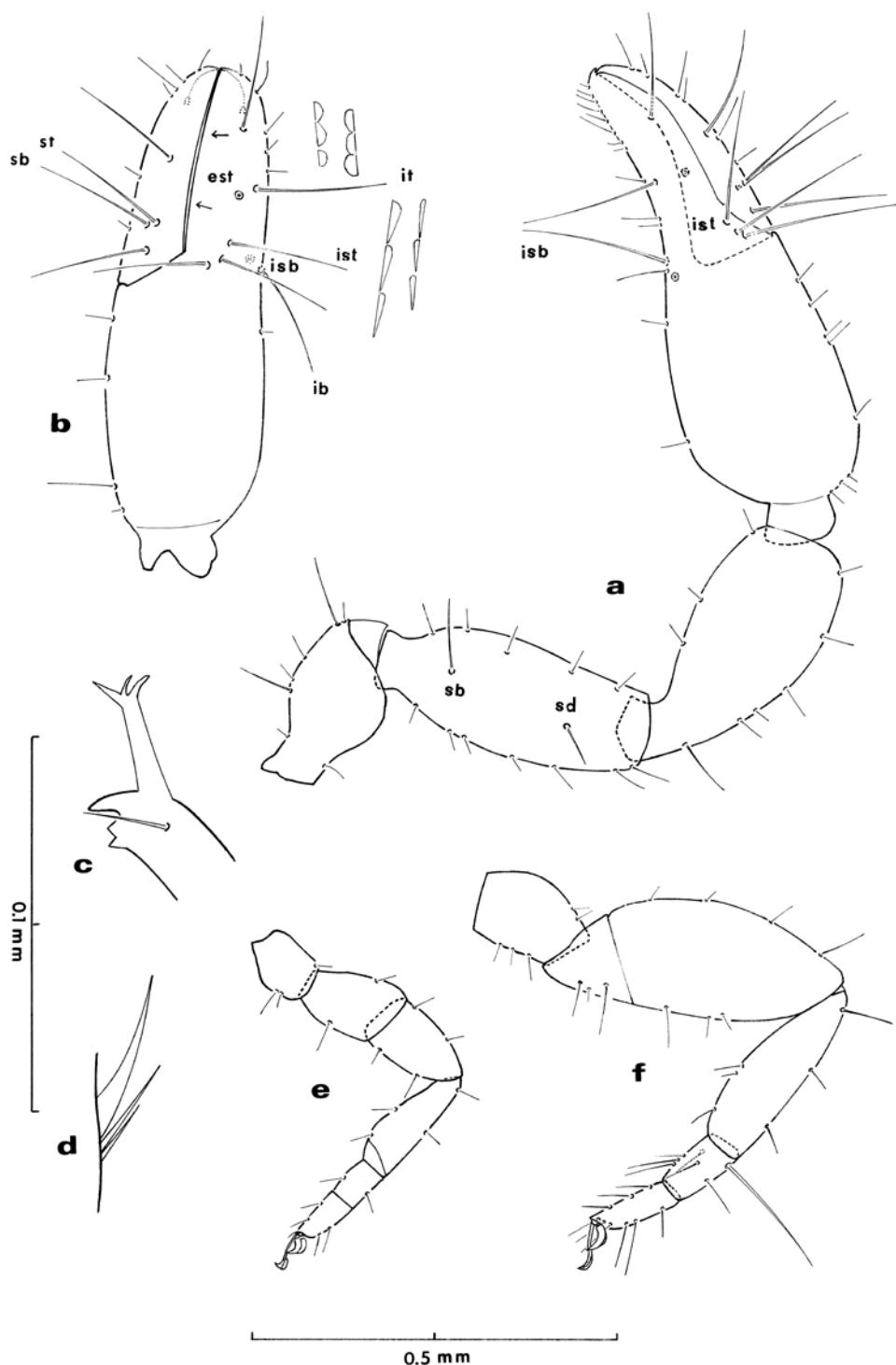
**Discussion.**— The proposed new genus *Heterohorus* differs from the genus *Horus* Chamberlin, (1930: 598-599), by having the trichobothria *b*, *sb* and *st* on the movable finger of the palpal chela arranged in a triangle (*sb* and *st* on the same level), versus *sb* clearly proximal to *st*, and from the very related genus *Hoffhorus* Heurtault (1976: 68-69), by the position of the trichobothrium *ist* on the exterior - versus interior surface, and of the intero-lateral position of *isb* versus dorsal position in ♂ and extero-lateral position in ♀ of the fixed finger.

*Heterohorus losfraileensis* spec. nov.  
(figs 7a-f, 8a-f)

**Material examined.**— Holotype: ♀ (1148) and (damaged) paratype ♀ (1550) from Los Frailes: # 166, South-western slope of Puerto Real, 18.vi.1936, and paratype ♂ (1282) from Tortuga, sudoeste: # 173, 1.viii.1936.

**Description.**— ♀ (description based on the holotype and partly on the paratype). Measurements, ratios and counts expressed as ranges. Body light yellowish orange, pedipalps somewhat darker, legs and chelicera a little lighter in colour. Body L 2.12-2.145.

Carapace L 0.50, greatest W 0.41, L/W 1.22, ocular W 0.29; eyes: 2 pairs, moderately developed, anterior - and posterior eye very close together and about one half the diameter of the anterior eye separated from the anterior margin of the carapace; anterior margin with 4 setae, posterior margin probably with only 1 lateral seta on both sides of median line.



Abdomen: chaetotaxy tergites: middle tergites with about 6 marginal setae and about 6 lyrifissures; chaetotaxy sternites IV-XI: 6: 4: 4: 4: 5: 6: 1TT1: TT1TT (T = tactile seta). Number of lyrifissures on sternites IV-XI respectively: 4, 3, 6, 4, 4, 4, 6, 9.

Chelicera (fig. 7c-d): 0.17/ 0.09, L/W 1.88 (1); movable finger L: 0.10-0.11; inner margin of fixed finger with 3 small non-sclerotic retroconical teeth associated with the apical tooth; movable finger with conical subapical lobe, connected with smaller subapical lobe downwards; galea L 0.03, with 3 small curved rami on top (1); flagellum of 3 spiny setae, anterior most one longest, weakly spinous in distal half of anterior margin, second - and third one decreasing in length, second one also weakly spinous in distal half of anterior margin (1); serrula exterior composed of 16 ligulate blades. Chaetotaxy: 5 acuminate setae on exterior surface of hand, of which exterior -, basal - and interior setae are extremely long, reaching farther up than fixed finger tip, movable finger with short acuminate seta (L 0.02) near base of apical tooth (1).

Pedipalp (fig. 7a-b): trochanter 0.23-0.24 / 0.125-0.13, L/W 1.80-1.82; femur 0.34-0.36 / 0.14-0.15, L/W 2.44-2.46; patella (with inner margin of pedicel strongly convex) 0.37-0.39 / 0.16-0.17, L/W 2.295-2.31; chela without pedicel 0.595-0.63 / 0.22-0.23, L/W 2.76-2.79; chela with pedicel 0.66-0.69 / 0.22-0.23, L/W 3.02-3.04; hand without pedicel 0.34-0.35 / 0.22-0.23, L/W 1.54-1.57; hand with pedicel 0.41-0.41 / 0.22-0.23, L/W 1.81-1.89; movable finger L 0.31-0.315, 0.90-0.92 × L hand without pedicel, and 0.77-0.77 × L hand with pedicel. Subbasal - (sb) and subdistal tactile seta (sd) on dorsum femur respectively on a level of 0.10-0.11 and 0.23-0.26 from exterior key point of femoral base.

Marginal teeth in both fingers ranging from small acute conical in distal part to rounded and slightly retro-conical and further to very flattened and poorly developed teeth at basal end of row.

Fixed finger with about 35 marginal teeth. Distance trichobothria and nodus ramosus from base apical tooth on outside curve: et 0.07-0.09, est 0.15-0.165, esb 0.25-0.265, eb 0.26-0.27, it 0.16-0.16, ist 0.23-0.23, isb 0.24-0.26, ib 0.27-0.28, and nodus ramosus 0.04-0.05, i.e. et and nodus ramosus distally located to est within distal quarter of fixed finger (finger L arbitrarily considered equal to movable finger L); est and it somewhat below median point finger and at about same level; sb, b, isb and ib close together near base finger; et at about ¼ finger L from top; fixed finger L 5.76-7.30 × venom duct L.

Movable finger with about 35 marginal teeth. Distance trichobothria and nodus ramosus from base apical tooth on outside curve: t 0.12-0.13, st 0.21-0.25, sb 0.21-0.26, b 0.245-0.29, and nodus ramosus 0.04-0.05, i.e. nodus ramosus within 1/8 finger L, t a little distal to median point finger, st, sb and b arranged in a triangle within basal part of finger, st and sb at about same level; movable finger L 6.62-7.50 × venom duct L.

First leg (fig. 7e): trochanter 0.10-0.105 / 0.075-0.075, L/D 1.38-1.395; femur 0.12-0.13 / 0.08-0.08, L/D 1.46-1.67; patella 0.13-0.14 / 0.08-0.09, L/D 1.57-1.67; femur L / patella L 0.91-0.91; tibia 0.16/0.06, L/D 2.94 (1); metatarsus 0.07/0.04, L/D 1.66 (1); tarsus 0.08-0.08 / 0.04-0.04, L/D 2.13-2.26; L claws 0.03-0.03; arolium L from base claws 0.05-0.05, and 1.57-1.65 × L claws.

◀ Fig. 7. *Heterohorus losfrailensis* gen. nov. et spec. nov., holotype ♀ (no. 1148) from Los Frailes (Lesser Antilles): a, dorsal aspect of right pedipalp; b, extero-lateral aspect of left palpal chela; c, fixed finger tip of right chelicera; d, flagellum of right chelicera; e, ventral aspect of right leg I; f, ventral aspect of right leg IV.

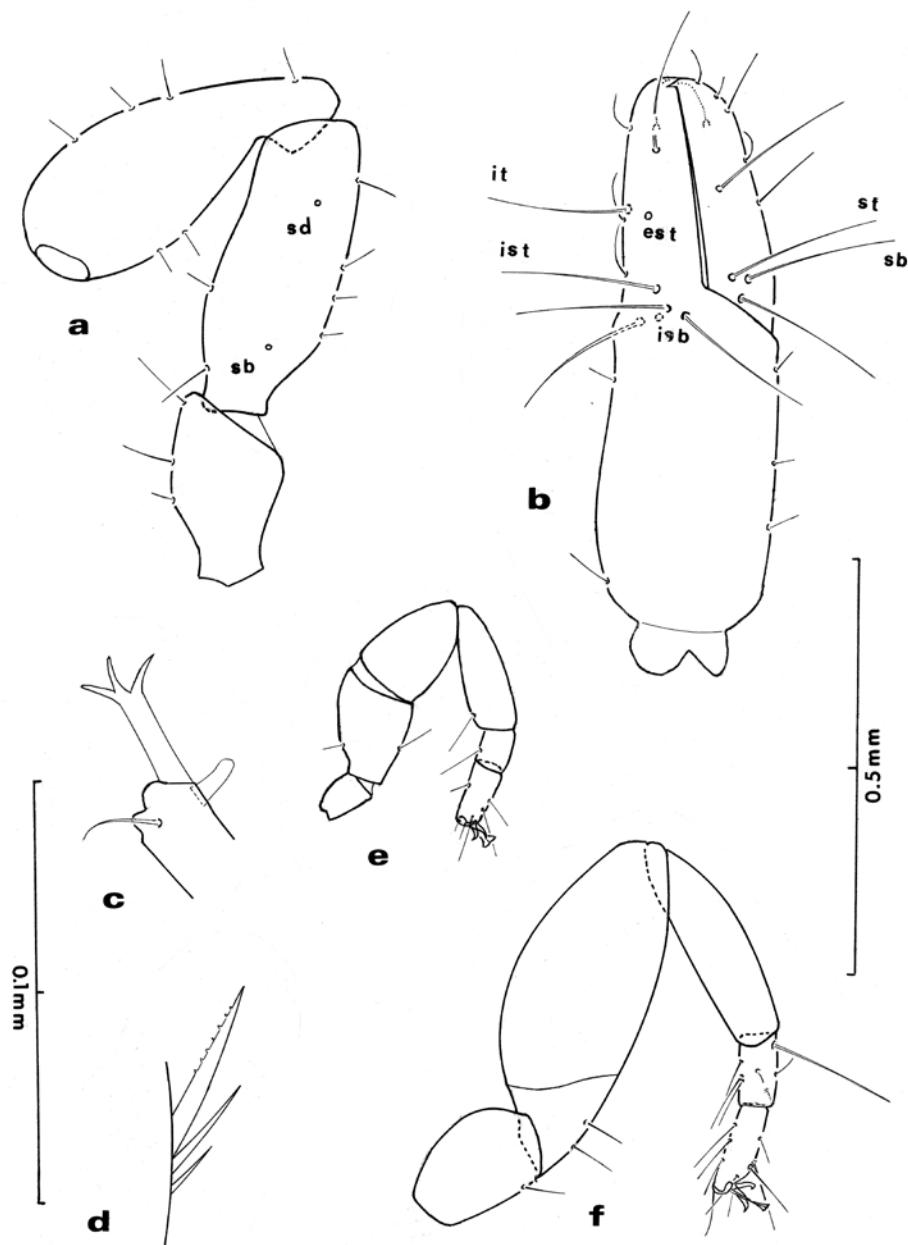


Fig. 8. *Heterohorus losfrailensis* gen. nov. et spec. nov., allotype ♂ (no. 1282) from Tortuga (Lesser Antilles): a, dorsal aspect of trochanter, femur and patella of right palpal chela; b, exterolateral aspect of palpal chela; c, fixed finger tip of left chelicera; d, flagellum of left chelicera; e, anterior aspect of left leg I; f, anterior aspect of left leg IV.

Fourth leg (fig. 7f): trochanter 0.15-0.15 / 0.10-0.10, L/D 1.44-1.47; femur 0.13-0.14 / 0.09-0.105, L/D 1.33-1.41; patella 0.31-0.34 / 0.15-0.16, L/D 2.06-0.14; femur + patella 0.38-0.41 / 0.15-0.16, L/D 2.56-2.60; tibia 0.26-0.275 / 0.08, L/D 3.11-3.28; metatarsus 0.09-0.10 / 0.05-0.06, L/D 1.64-1.75; tarsus 0.11-0.11 / 0.05-0.05, L/D 2.30-2.33; L claws 0.04-0.04; arolium L 0.07-0.07, and 1.56-1.56 × L claws.

Chaetotaxy of metatarsus of fourth leg: exterior lateral: T+1 (tactile seta T located at a quarter of metatarsus L from proximal end), dorsal: 1, interior lateral : 3 (1 + 2×1), ventral: 1 (setal formula: T+1-1-3-1).

Chaetoaxy and internal structure of ♀ genital area: anterior operculum with 3 setae and 2 lyrifissures on each side of median line, posterior operculum with 2 setae and 2 lyrifissures on each side of median line, 1 rounded median cribiform plate is identifiable.

Male (fig. 8a-f). Description based on the allotype ♂ (1282) from Tortuga (Lesser Antilles).

Colour about similar to that of female. Body L 2.075.

Carapace L 0.48, greatest W 0.38, L/W 1.28; eyes much like those in ♀, ocular W 0.19; anterior margin with 4 -, posterior margin with 2 marginal setae.

Abdomen: middle tergites with about 6 marginal setae and about 6 lyrofissures.

Chelicera (fig. 8c-d): 0.22/0.10, L/W 2.32; movable finger L 0.12; inner margin of fixed finger with 4 very flat retroconical non-sclerotic marginal teeth associated with the apical tooth; movable finger with conical subapical lobe; galea: extreme L 0.004, on top 3 curved rami of moderate length; flagellum of 3 spiny setae, anterior most one with about 8 small spinules along anterior margin, L longest one 0.05, middle one 0.035 and smallest one 0.02; serrula exterior composed of 17 ligulate blades; chaetotaxy as in ♀.

Pedipalp (fig. 8a-b): trochanter 0.22/0/13, L/W 1.67; femur 0.38/0.15, L/W 2.56; patella 0.40/0.165, L/W 2.43; chela without pedicel 0.62/0.20 (D\*), L/D 3.09; chela with pedicel 0.62/0.20 (D), L/D 3.39; hand without pedicel 0.36/0.20 (D), L/D 1.78; hand with pedicel 0.40/0.20 (D), L/D 2.0; movable finger L 0.31, 0.87 × L hand without pedicel, and 0.77 × hand with pedicel; subbasal - (sb) and subdistal tactile seta (sd) on dorsum femur respectively on a level of 0.09 and 0.27 from exterior key point of femoral base.

Marginal teeth in both fingers ranging from triangular and cuspidate in the distal part, to more rounded and flattened in the middle part, and extremely flattened, acuspid and broader teeth in the basal part of the teeth row. Teeth are lacking in the very base of the finger.

Fixed finger with about 30 marginal teeth. Distance trichobothria and nodus ramosus from base apical tooth on outside curve: *et* 0.075, *est* 0.16, *esb* 0.27, *eb* 0.275, *it* 0.16, *ist* 0.245, *isb* 0.275, *ib* 0.29, and nodus ramosus 0.06, i.e. *et* and nodus ramosus at a level of about 1/5 finger L from the distal end (finger L arbitrarily considered equal to movable finger L), position of *et* a little proximal to that of nodus ramosus, *it* and *est* at about same level near median point of finger, *ist* at a level of about 1/5 finger L from base and associated with *esb*, *eb*, *isb* and *ib*.

Movable finger with about 30 marginal teeth. Distance trichobothria and nodus ramosus from base apical tooth on outside curve: *t* 0.13, *st* 0.23, *sb* 0.24, *b* 0.27, and nodus ramosus 0.06, i.e. nodus ramosus at a level of 1/5 finger L from tip, *t* a little distal to

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\* D = depth

median point of finger, *st*, *sb* and *b* arranged in a triangle within basal quarter of finger, *st* and *sb* at about same level.

First leg (fig. 8e): trochanter 0.10-0.07, L/D 1.53, femur 0.13/0.09, L/D 1.48; patella 0.135/0.09, L/D 1.47; femur L 0.96 × patella L; tibia 0.16/0.06, L/D 2.72; metatarsus 0.065/0.04, L/D 1.54; tarsus 0.08/0.04, L/D 2.16; L claws 0.02; arolium L from base claws 0.04, and 1.69 × L claws.

Fourth leg (fig. 8f): trochanter 0.16/0.12, L/D 1.36; femur 0.14/0.10, L/D 1.48; patella 0.33/0.16, L/D 2.04; femur + patella 0.40/0.16, L/D 2.42; tibia 0.28/0.08, L/D 3.44; metatarsus 0.09/0/05, L/D 1.75; tarsus 0.12/0.05, L/D 2.56; L claws 0.04; arolium from base claws 0.06, and 1.71 × L claws.

Chaetotaxy of metatarsus of fourth leg: exterior lateral: T+1 (tactile seta T very close to proximal end), dorsal: 1, interior lateral: 1 + 1×2 (near distal end), ventral 1 (setal formula: T+1, 1, 3, 1).

Male genital area not suitable for study.

**Etymology.**— The generic name of this olpiid (*Heterohorus*) refers to both relating genera: Horus and Novohorus (hetero (Greek for other, different), the specific epithet (*losfrailensis*) refers to the first location (Los Frailes) where the material was collected.

### Identification key to the Caribbean genera of the family Olpiidae

Adapted and extended key on account of the new genera described in this paper, partly based on Hoff (1945: 1-2).

1. Venom ducts of chelal fingers very long; nodus ramosus of fixed finger distinctly proximal to both taxile setae *et* and *it*; length of movable finger less than four times the length of the venom duct; (tribe Hesperolpiini Hoff, 1964) ..... 2
- Venom ducts of chelal fingers shorter; length of movable finger (more than) four to six times longer than the length of the venom duct; nodus ramosus of fixed finger at or proximal to the level of tactile seta *et* and usually distal to *it*; (tribe Olpiini Banks, 1895) ..... 5
2. One tactile seta on dorsum of palpal femur ..... 3
- Two tactile setae on dorsum of palpal femur ..... 10
3. Nodus ramosus in fixed finger of palpal chela clearly proximal to trichobothrium *et* ..... 4
- Nodus ramosus in fixed finger of palpal chela about at the level of trichobothrium *et* ..... 6
4. Venom duct in movable finger of palpal chela long (about 1/3-1/4 × finger length); trichobothrium *ist* in fixed palpal chela distal to *est*; nodus ramosus in movable finger very clearly distal to *t* ..... *Aphelolpium* Hoff, 1964
- Venom duct in movable finger of palpal chela much shorter; nodus ramosus in movable finger proximal to *t* ..... 5
5. On fixed finger of palpal chela trichobothrium *it* distal and *ist* proximal to *est*; on movable finger of palpal chela *st* nearer to *sb* than to *t* ..... *Pachyolpium* Beier, 1931
- On fixed finger of palpal chela trichobothrium *it* and *ist* clearly distal to *est*; on movable finger of palpal chela *st* clearly distant from *sb* and *b* ..... *Apolpium* Chamberlin, 1930 x)

6. Trichobothrium *ist* on fixed finger of palpal chela distal to *est* ..... *Banksolpium* Muchmore, 1986  
 - Trichobothrium *ist* on fixed finger of palpal chela proximal to *est* ..... 7
7. Cheliceral flagellum with 2 setae ..... 9  
 - Cheliceral flagellum with 3 setae; subapical lobe conical; very short venom duct in movable finger ..... 8
8. Venom duct length in chelal movable finger  $\frac{1}{5}$ - $\frac{1}{6}$  × finger length in ♂; trichobothrium *it* clearly distad of *est*; *ib* not in subbasal position but situated on about the level of *esb*; cheliceral serrula exterior with 21 blades ..... *Tricholpium* gen. nov.  
 - Venom duct length in chelal movable finger  $\frac{1}{5}$ - $\frac{1}{8}$  × finger length in ♂, and  $\frac{1}{6}$ - $\frac{1}{9}$  × finger length in ♀; *it* and *est* inserted near the middle of the fixed finger; *ib* subbasal and situated far below the associated trichobothria *eb*, *esb*, *isb* and *ist*; cheliceral serrula exterior with 16 blades ..... *Leptolpium* van den Tooren, 2002
9. Subapical lobe of cheliceral movable finger spine-like and subparallel to the apical tooth ..... *Neopachyolpium* Hoff, 1945  
 - Subapical lobe of cheliceral movable finger tooth-like, sometimes closely associated with the apical tooth ..... *Planctolpium* Hoff, 1964
10. Movable finger of palpal chela in adult animals with 4 trichobothria ..... 11  
 - Movable finger of palpal chela in adult animals with 3 trichobothria .....  
      ..... *Antillolpium* Muchmore, 1991
11. Trichobothria *it* and *est* on fixed finger of palpal chela at about same level, *b*, *sb* and *st* on movable finger of palpal chela arranged in a triangle (*sb* about on same level as *st*) ..... 12  
 - Trichobothrium *it* distal to *est* on fixed finger of palpal chela ..... 13
12. Trichobothrium *ist* intero-lateral and *isb* dorsally located on fixed finger of palpal chela ..... *Hoffhorus* Heurtault, 1976  
 - Trichobothrium *ist* in extero-lateral - and *isb* in intero-lateral position on fixed finger of palpal chela ..... *Heterohorus* gen. nov.
13. Trichobothria *b*, *sb* and *st* on movable finger of palpal chela situated more or less in a straight row ..... *Novohorus* Hoff, 1945  
 - Trichobothria *b*, *sb* and *st* on movable finger of palpal chela arranged in a triangle (*sb* at about same level as *st*) ..... *Beierolpium* Heurtault, 1976

Note.— In this key it has been supposed that the genus *Apolpium* probably belongs to the tribe Olpiini. On account of the following features: shorter venom ducts than in the tribe Hesperolpiini and nodus ramosus in chelal movable finger proximal to trichobothrium *t* versus clearly distal to *t*.

#### Revised identification key to the species of the genus *Pachyolpium* from the West Indies

A further adaptation and extension of the original key made up by Hoff (1945: 2-3) and revised by van den Tooren (2002: 452-454).

1. Length of movable chelal finger 0.4 mm or less, subequal to length of hand without pedicel; palpal patella 0.45 mm or less in length, slightly larger than femur; length/

- width of palpal femur 2.3 or less; width of palpal chela about 0.31 mm; body length 2 mm or less ..... *P. brevipes* (With, 1907)
- Length of movable chelal finger 0.4 mm or more; palpal patella 0.45 mm or more in length; length/width ratio of palpal femur 2.6 or more (except in female of *P. adiposum* Hoff, 1945 = *P. isolatum* (R.V. Chamberlin, 1925) comb. nov. Muchmore, 1984 (male unknown): length/width ratio 2.35-2.45, and in male of *P. arubense variabile* van den Tooren, 2002: length/width ratio 2.46-2.65) ..... 2
2. Length/width ratio of palpal femur less than 2.8 ..... 3
- Length/width ratio of palpal femur 2.8 or more ..... 7
3. Length/width ratio of palpal femur 2.35-2.45; length/width ratio of palpal patella 2.1; length of patella 0.60 mm ..... ♀ (♂ unknown) *P. isolatum* (R.V. Chamberlin, 1925)
- Length/width ratio of palpal femur more than 2.45 ..... 4
4. Length/width ratio of palpal femur 2.46-2.65; length of movable chelal finger 0.49-0.59 mm ..... ♂ *P. arubense variabile* van den Tooren, 2002
- Length/width ratio of palpal femur 2.63-2.78 ..... 5
5. Palpal femur and patella 0.7 mm or more in length; length of movable chelal finger 0.63-0.70 mm ..... ♀ *P. arubense variabile* van den Tooren, 2002
- Palpal femur and patella 0.6 mm or less in length ..... 6
6. Body less than 2 mm long; length/width ratio of palpal patella 2.3 ..... *P. reimoseri* Beier, 1931
- Body of male about 2 mm long, female longer; length/width ratio of palpal patella 2.4-2.45 ..... *P. puertoricensis* Hoff, 1945
7. Body length less than 2 mm, except in female of *P. atlanticum* Mahnert & Schuster, 1981; body length 1.73-2.60 mm; length of movable chelal finger less than 0.5 mm ..... 8
- Body length 2.1 mm or more; length of movable finger more than 0.5 mm ..... 10
8. Middle tergites up to 23 setae ..... *P. atlanticum* Mahnert & Schuster, 1981
- Middle tergites with no more than 10 or 12 setae ..... 9
9. Length/width ratio of chelicera 1.8; length of cheliceral movable finger 0.135, length/depth of leg I 3.9 ..... *P. leptotarsus* van den Tooren, 2008
- Length/width ratio of chelicera 1.4; length of cheliceral movable finger 0.18; length/depth ratio of tarsus of leg I 3.5 ..... *P. confundens* Hoff, 1945
10. Palpal patella and femur about 0.70 mm or less in length ..... 11
- Palpal patella and femur more than 0.70 mm in length ..... 12
11. Length of palpal femur about 0.9 times length of patella ..... *P. confusum* van den Tooren, 2002
- Length of palpal femur more than 0.9 times length of patella or subequal in length.. 14
12. Position level of trichobothrium *est* on palpal fixed finger about halfway those of *it* and *ist* ..... *P. machadoi* (Heurtault, 1980)
- Position level of trichobothrium *est* on palpal fixed finger not about halfway those of *it* and *ist* ..... 13
13. Position level of trichobothrium *est* farther from the level of *ist* than from the level of *it* (2.0 × in male, 1.2 × in female) ..... *P. dispersum* spec. nov.
- Position level of trichobothrium *est* distinctly closer to the level of *ist* than to the level of *it* ..... *P. amplum* (Hoff, 1964)
14. Length/width ratio of palpal patella 2.3 to 2.4 ..... ♂ *P. granulatum* Beier, 1954

- Length/width ratio of palpal patella more than 2.4 ..... 15
- 15. Length/width ratio of palpal patella 2.45; (no palpal measures of female given) ..... ♂ *P. furculiferum* (Balzan, 1891)
- Length/width ratio of palpal patella 2.55-2.80; (palpal measures of female: 2.43-2.69) ..... ♂ *P. arubense arubense* Beier, 1936
- 16. Inner margin of palpal femur slightly concave; movable chelal finger shorter than hand with pedicel ..... ♀ *P. granulatum* Beier, 1954
- Inner margin of palpal femur more or less convex; length of movable chelal finger subequal to the length of hand with pedicel or longer ..... 17
- 17. Length/width ratio of palpal femur 3.0; movable chelal finger more than 0.66 mm long; length of palpal patella 0.7 mm ..... ♂ (♀ unknown) *P. aureum* Hoff, 1945
- Length/width ratio of palpal femur 3.05 or more; length of movable chelal finger less than 0.65 mm; length of palpal patella less than 0.68 mm ..... *P. medium* Hoff, 1945

### New localities of Olpiidae from the Caribbean area

*Aphelolpium scitulum* Hoff, 1964.—St. Croix: # 611, Fair Plain, shore, 15.vi.1955: 1 ♂ (527). Tintamarre: # 455, 20.vi.1949: 1 ♂ (734). Fourche (W of St. Barts): # 452, 22.vi.1949: 1 ♀ (738). Barbuda: # 597, River Quarter, W of Bull Hole, 9.vii.1955: 1 ♂ (1307). Antigua: 594, Friars Hill, height: 50-70 m, 16.vii.1955: 1 ♂ (416).

*Aphelolpium brachytarsus* van den Tooren, 1995.—Venezuela, Los Frailes, Puerto Real: # 166, 18.vi.1936: cf. ♂ (149). Same: # 168, La Pechá, 19.vi.1936: 1 adult specimen (1437).

*Aphelolpium thibaudi* Heurtault & Rebière, 1983.—Dog Island (W of Anguilla): # 488, 17.iv.1949: 2 ♂♂ (1318-1319). Tortuga, sudoeste Tortuga: # 173, 1.viii.1936: 1 ♂ (49).

*Heterolpium lasavensis* gen. nov. et spec. nov.—Las Aves: # 179 A, Ave de Barlovento: 27.vii.1936: holotype ♂ (1286) and 2 paratypes (1287-1288).

*Pachyopium arubense arubense* Beier, 1936.—St. Croix: # 611, Fair Plain, shore, 15.vi.1955: 1 deutonymph (528). Barbuda: # 597, River Quarter, W of Bull Hole, 9.vii.1955: 2 ♂♂ (574, 1306) and 1 tritonymph (573). Antigua: # 593, Parham Hill, S Slope, 14.vii.1955: 1 deutonymph (535). Same: # 595, Yepton Mill, W of St. John's, 17.vii.1955: 1 ♂ (292).

*Pachyolpium arubense variabile* van den Tooren, 2002.—Orchila: # 174, Huespen, Cerros de sudoeste: 2 ♂♂ (132-133) and 1 tritonymph (134).

*Pachyolpium cf. arubense variabile* van den Tooren, 2002.—La Guaira (Venezuela): # 301 A, Los Angelitos, 10.viii.1948: 1 tritonymph (633).

*Pachyolpium confusum* van den Tooren, 2002.—Fourche (W of St. Barts): # 452, 2.vi.1949: 1 ♀ (575) and 1 deutonymph (576).

*Pachyolpium dispersum* spec. nov.—Tortuga, sudoeste: # 173, 1.viii.1936: holotype ♀ (1281). Rancho Grande (Venezuela): # 555, 1½ km E of Estación Biológico, 17.iii.1955: 3 paratypes ♀♀ (852-853, 856), allotype ♂ (854), 1 paratype ♂ (855), 2 tritonymphs (857-858), deutonymph (859), and 3 protonymphs (864, 870, 883).

*Pachyolpium granulatum* Beier, 1954.—Surinam: # 563, Republiek, SW of Paramaribo decaying wood: 3.ix.1955: 1 ♂ (892): 1 tritonymph (893) and 1 deutonymph (894).

*Pachyolpium leptotarsus* spec. nov.—Los Frailes: # 166, Puerto Real, 18.vi.1936: holotype ♂ (1147). Same: # 167, 18.vi.1936: 2 paratype ♂♂ (1163, 1340).

*Pseudohorus losfrailensis* gen. nov. et spec. nov.—Los Frailes: # 166, Puerto Real, 18.vi.1936: holotype ♀ (1148). Same: # 168, La Pechá, 19.vi.1936: 1 paratype ♀ (1550). Tortuga, sudoeste: # 173, 1.viii.1936: 1 paratype ♂ (1282).

Note.— Above mentioned localities are fully described by Wagenaar Hummeling (1940: 26-28; 1953: 11, 24, 27-28; 1981: 28, 43, 45, 81-82).

All islands mentioned belong to the Lesser Antilles: St Croix, Fourche, Barbuda, Dos Island and Antigua are part of the Windward Group; Tortuga, Orchila and Los Frailos of the Leeward Group.

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